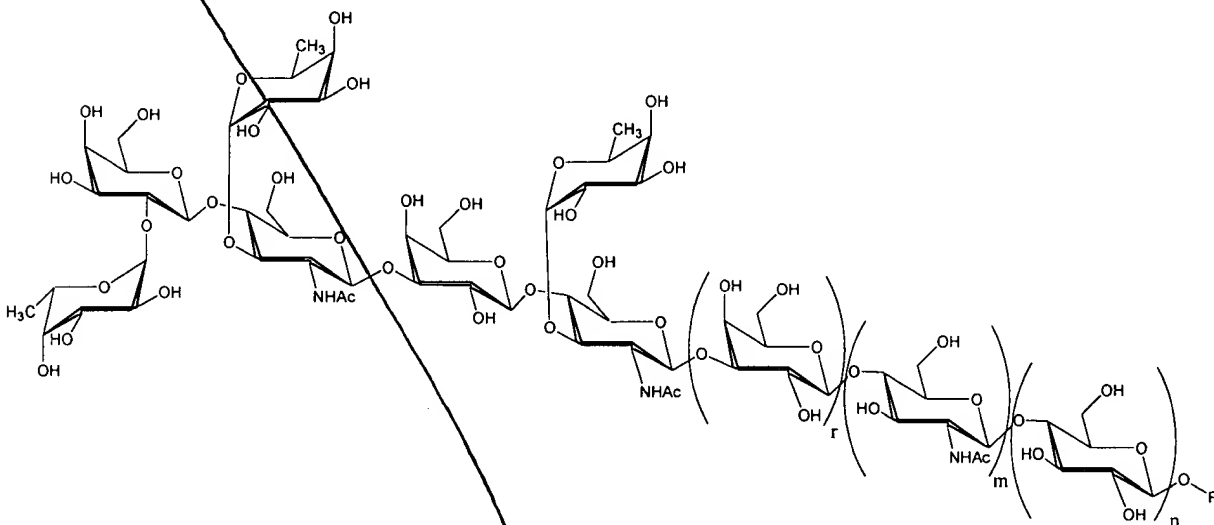


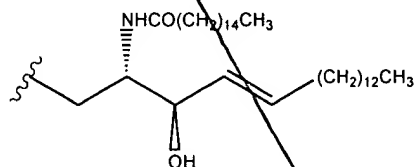
109. The compound of claim 108 wherein the compound is bound to a suitable carrier protein or lipid, said compound being bound either directly or by a cross-linker selected from the group consisting of a succinimide and an M_2 linker.

110. The compound of claim 108 wherein the compound has the structure:

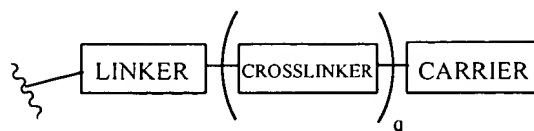


wherein r , m , and n are independently 0, 1, 2 or 3;

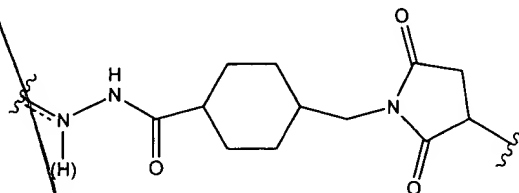
wherein R is H, substituted or unsubstituted alkyl, aryl or allyl, an amino acyl moiety, a moiety having the structure:



or a moiety having the structure:



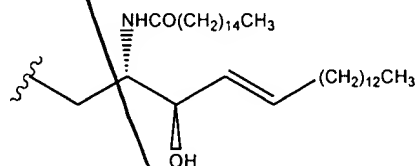
wherein the linker is $-(CH_2)_s-CH_2-$ or $-(CH_2)_s-CH=$ where s is an integer between 0 and 8;
 wherein the crosslinker is selected from the group consisting of a succinimide and an M_2 linker having the structure:



wherein q is 0 or 1;

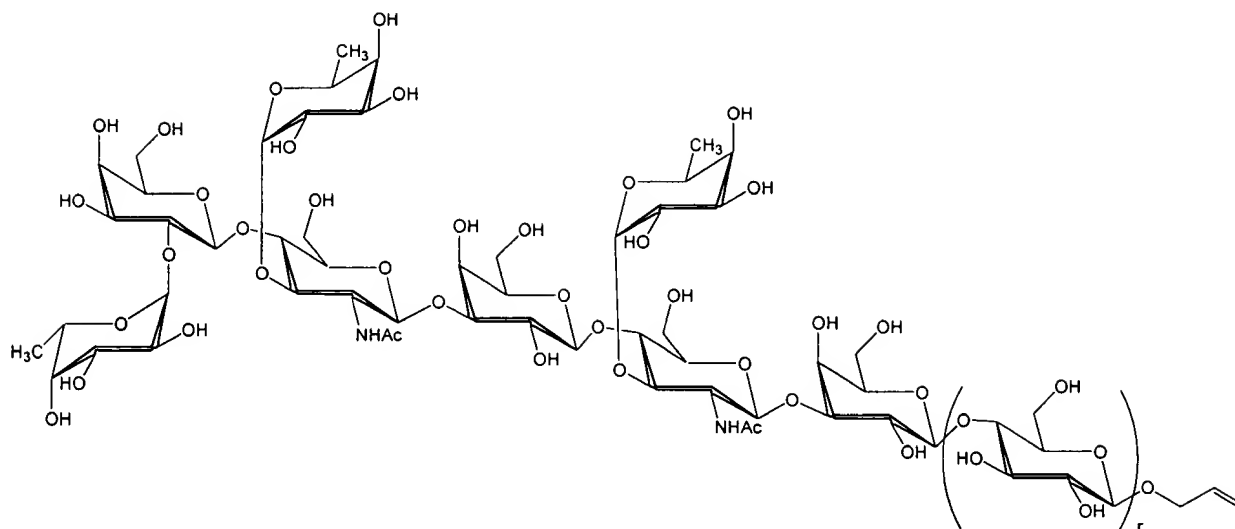
and wherein the carrier is a protein, peptide or lipid, and is optionally chemically modified prior to conjugation with the linker when q is 0, or with the crosslinker when q is 1;

with the proviso that when R is the moiety having the structure:



the set of indices (r, m, n) is not $(1, 0, 1)$.

111. The compound of claim 109 or 110 wherein the protein is bovine serum albumin, polylysine, or keyhole limpet hemocyanin.
112. A compound having the structure:



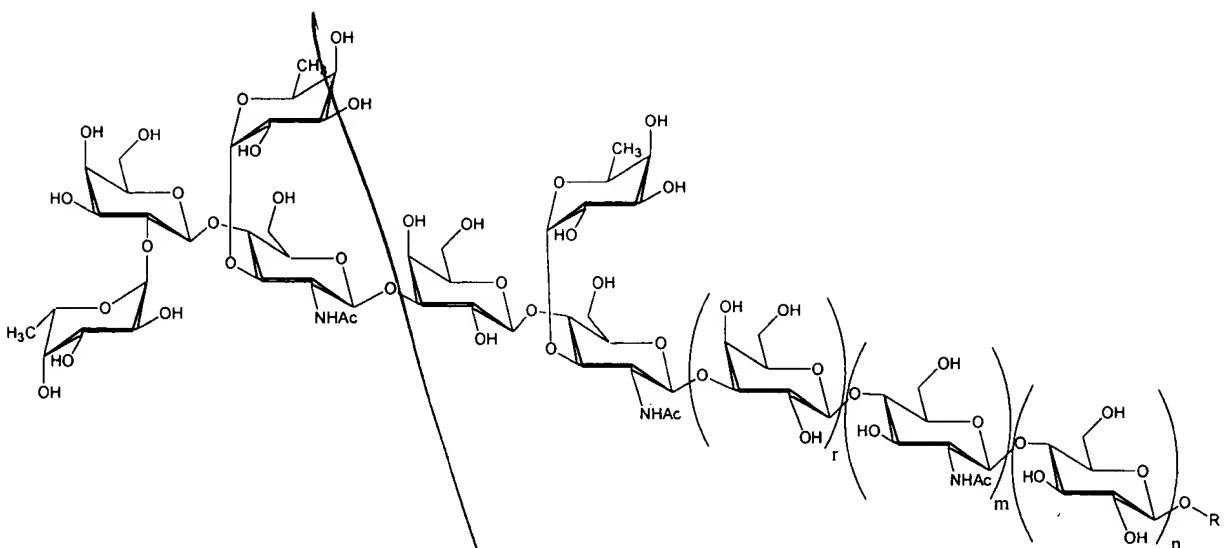
wherein r is 0, 1, 2, 3, or 4.

113. The compound of claim 112 wherein r is 1.

53 C3 114. A composition comprising a compound of claim 108; and optionally an immunological adjuvant and/or a pharmaceutically acceptable carrier.

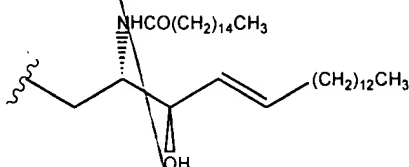
115. The composition of claim 114 wherein the compound is bound to a suitable carrier protein or lipid, said compound being bound either directly or by a cross-linker selected from the group consisting of a succinimide and an M_2 linker.

54 C4 116. The composition of claim 114 wherein the compound has the structure:

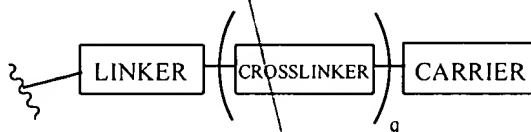


wherein r, m, and n are independently 0, 1, 2 or 3;

wherein R is H, substituted or unsubstituted alkyl, aryl or allyl, an amino acyl moiety, a moiety having the structure:

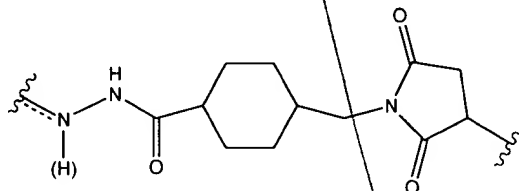


or a moiety having the structure:



wherein the linker is $-(CH_2)_s-CH_2-$ or $-(CH_2)_s-CH=$ where s is an integer between 0 and 8;

wherein the crosslinker is selected from the group consisting of a succinimide and an M_2 linker having the structure:



wherein q is 0 or 1;

and wherein the carrier is a protein, peptide or lipid, and is optionally chemically modified prior to conjugation with the linker when q is 0, or with the crosslinker when q is 1;